Beyond Environmental Compliance:

Fort Lewis Sustainability Program

Sustainability Education Day, Fort Lewis WA
30 October 2003

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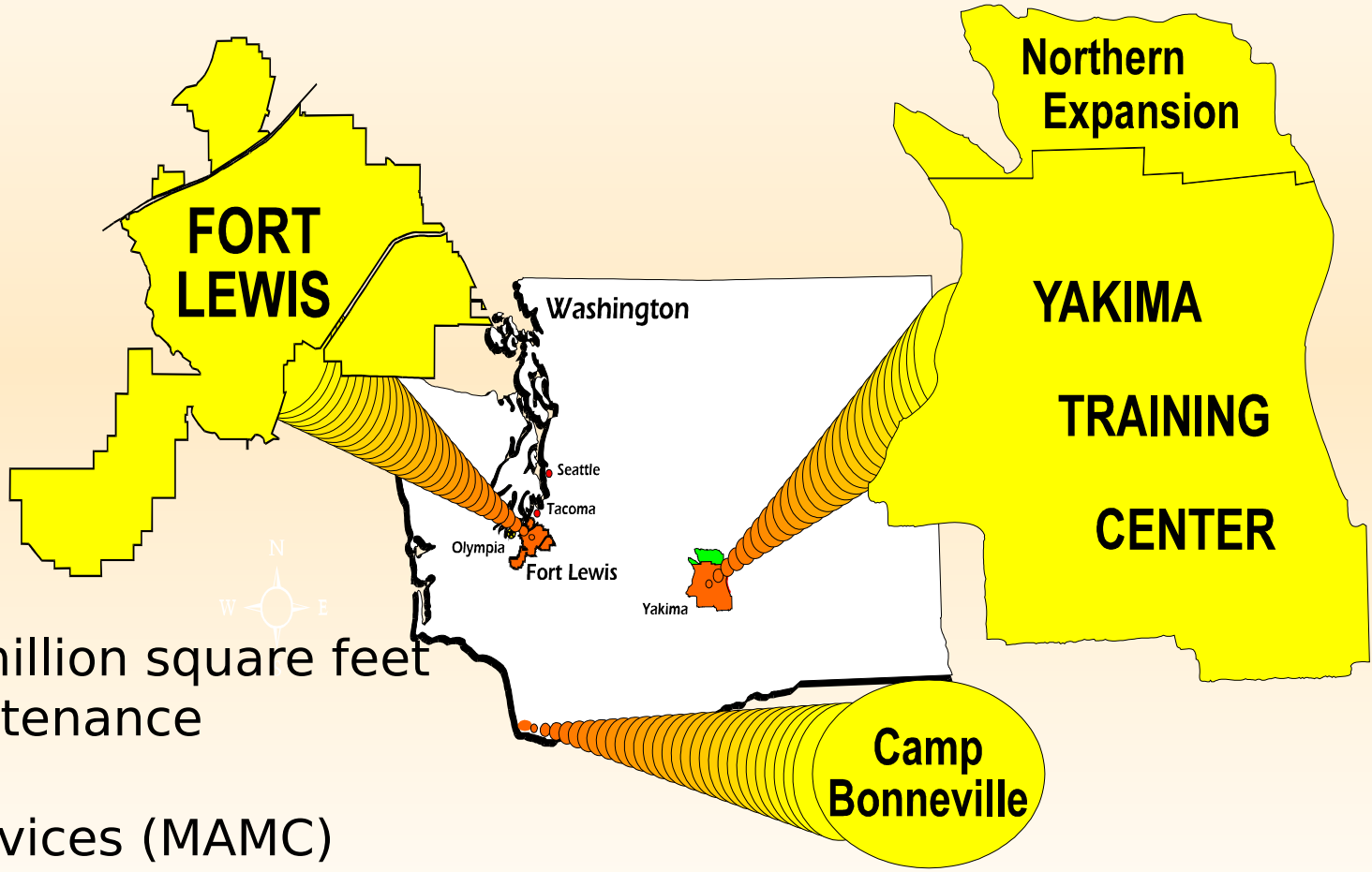
I Corps & Fort Lewis



- Facilities - 22 million square feet
- Industry - maintenance
- Major utilities
- Emergency services (MAMC)
- Housing - family and single soldiers
- Goods and services

Ft. Lewis - 86, 176 Acres

Yakima - 323,651 Acres

What is "Sustainability"?

"The application of the Golden Rule *from generation to generation*."

A Term describing a state of community growth and development where:

- **–Present requirements are met**
- **–without compromising ability of future generations**
- **–to meet their own needs**

Fort Lewis From Space

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The Approach

(1) Establish the baseline
(Baseline Document)

(2) Address the issues
(Installation Sustainability Workshop, Feb 5-7, 2002)

- **Stakeholders from within and outside Fort Lewis**
- **Defined desired end states and 25-year goals for each focus area**

(3) Link objectives to resources for each goal
(5-year implementation plans)

- **Implementation Teams assigned, including outside stakeholders as needed**
- **Resource the plans through the installation programming and budgeting process**

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Fort Lewis Environmental Sustainability Goals

1. Reduce traffic congestion and Air emissions by 85% by 2025
2. Reduce Air pollutants from training without a reduction in training activity
3. Reduce stationary source air emissions by 85% by 2025
4. Sustain all activities on post using renewable energy sources and generate all electricity on post by 2025
5. All facilities adhere to the SPiRiT Platinum standard for sustainable facilities by 2025
6. Cycle all material use to achieve ZERO net waste by 2025
7. Obtain healthy, resilient Fort Lewis and regional lands that support training, ecosystem, cultural, and economic values by 2025
8. Recover all listed and candidate federal species in South Puget Sound Region
9. Cascade water use to achieve ZERO discharge of wastewaters by 2025
10. Reduce Fort Lewis potable water consumption by 75% by 2025
11. Fort Lewis contributes no pollutants to Groundwater and has remediated all contaminated groundwater by 2025
12. Develop an effective regional aquifer and watershed management program by 2012

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Integration

Installation Sustainability Program

From Lofty Goals

DRIVEN BY:

- SELC – March 2000
- FORSCOM – Feb 2002
- New Army Env. Strategy
- Good Common Sense

ISO 14001 Environmental Management System

Into Daily Work

REQUIRED BY:

- Executive Order 13148 - 22 April 2000
- Memorandum from DASA - 13 July 2001
- Memorandum from DOD - 5 April 2002
- Good Business Sense

Sustainability Management System

Transformation Campaign Plan – LO12

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Ft. Lewis Public Works

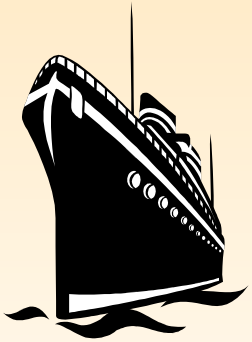
ISO 14001 Certified 5 Sept 2000

- Gap Analysis: 73% compliant to standard
- Provides rigor (Control, Tracking & Integrated Standardization)
- Say what you do, do what you say
- Cost is in Personnel Time (But worth it)
- Ownership and Empowerment
- Changing the culture
- A Cause for Celebration
- Environmental Compliance
  - –No NOV's Since Certification (Sept 00)

Expand on the Benefits

- **Expand ISO 14001 EMS to the Garrison**
  - Garrison Env. Policy & Implementation Plan signed April 03
  - Deputy GC Assigned as EMS Director June 03
  - Tier I and II documents, Intranet site established July 03
  - Quarterly Garrison Commander lead staff IPRs
  - 3rd party Certification NLT Dec 04
- **Integration with existing Army systems**

Before EMS



After EMS

- **Improved compliance, but for Significant Improved Environmental Performance….**

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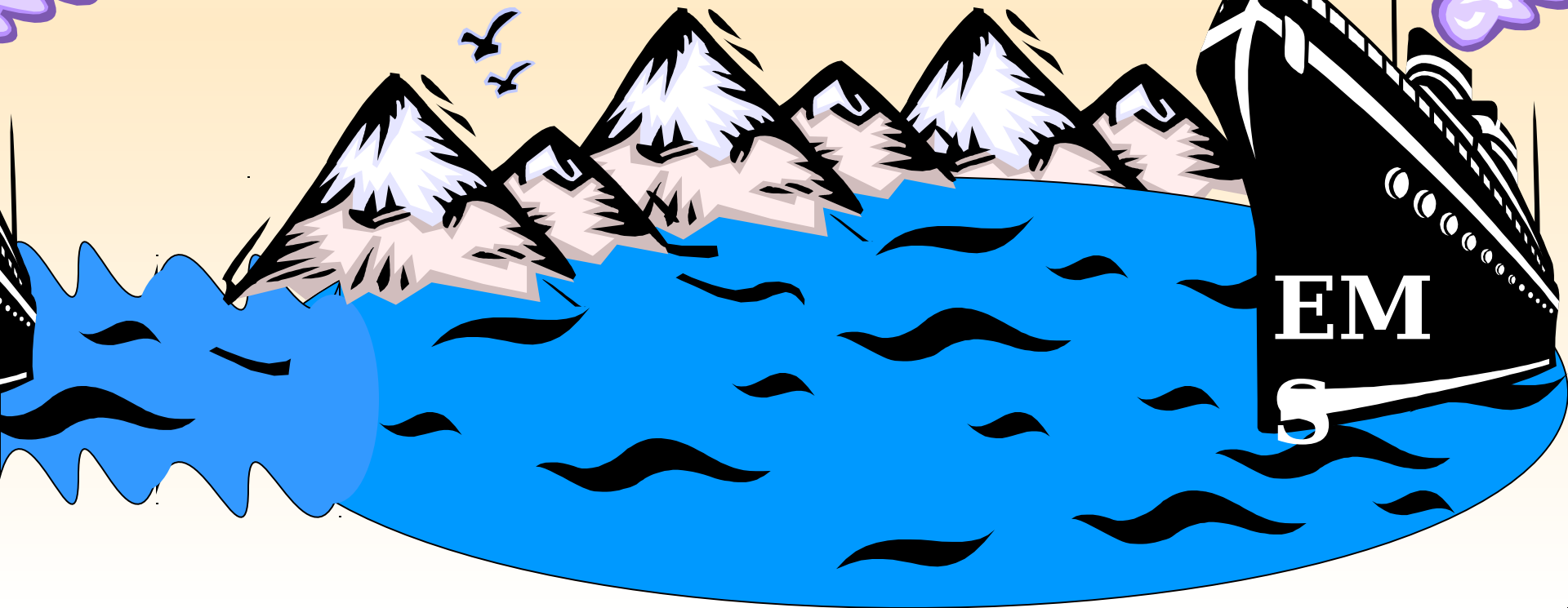
STOP

Puttering around in the Pond….

Sustainability



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and START

Putting your EMS to Work

Sustainability- A *mission focused* Environmental Management System

- Army Mission
- **Why?**
  - Protect and Preserve (sustain?) the American Way of Life
- **Army Environmental Goal:**
  - Sustain the Land We Defend
- **Sustainability Goal:**
  - Extending the human species stay on earth, and improving the quality of that existence.
- **HOW? - EMS is an Integration of these goals and ethic into its culture and daily activities**
  - Systems and system interaction

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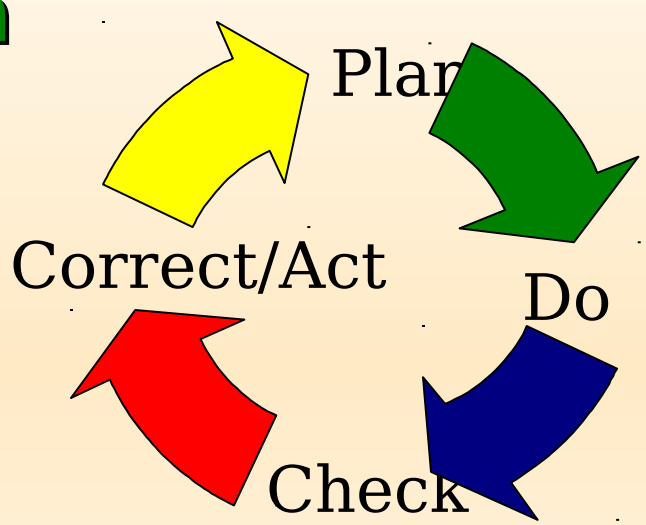
ISO 14001 Environmental Management System (EMS) Criteria



I. Environmental Policy Statement

II. Planning

Env Aspects/Impacts
Legal and Other Requirements

Objectives and Targets
Management Programs

III. Implementation/Operation

Structure and Responsibility
Training, awareness and competence
Communication
EMS Documentation
Document Control
Operational Control
Preparedness and Response

IV. Checking/Corrective Action

Monitoring and Corrective Action
Preventive Action
Records
EMS Audit

V. Management Review

* A key link to The Installation Sustainability Program

Some 5- Year SIP Objectives

Air Quality

- Alternate Fueling Station in place for use by Fort Lewis and surrounding community by 2007
- 25 Neighborhood Electric Vehicles (NEV) for on post use by 2007

Infrastructure/Energy

- 50% of electricity from renewable sources by FY 2008
- Develop a baseline SPiRiT rating for all permanent buildings by FY 2004

Product/Material Management

- Change procurement to introduce only cyclable materials to Fort Lewis
- Achieve 40% reduction in waste stream leaving Fort Lewis

Sustainable Training Lands

- 2 to 3 sites identified and acquired in regional proximity to installation to reduce encroachment, maintain training capability, and promote natural resources conservation
- Establish new populations of listed and candidate species (regionally)

Water

- Reduce wastewater discharge 25% by 2007
- Reduce potable water consumption 25% by 2007

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ISP / EMS Linkage

Process	Significant Aspects	Aspects	Impacts
Fuel Mngt	Equipment Use Pumping Fuel Leakage of Fuel Collect Recycled	Equip Use Pumping Fuel Leakage of fuel	Air Emissions Spills/releases to soil/air/water

PW Objectives & Targets

ISP 5-Year Objectives	ISP 25-Year Goals
A. 25 NEV on post use A. 50% GSA fleet will be AFV by 2007 A. Alternate fuel station in place by 2007	A. Reduce traffic congestion and air emissions by 85%

An Example PW EMS Annual Objectives & Targets

Objective 5: Develop necessary plans to support the following programs: Private Lands Initiative (PLI); Noxious Weed Control; Reduction of Training Lands Roads; Recovery of Endangered Species.

a. Target: By September 30, 2003, implement a Scott's Broom and Noxious Weed control plan that will achieve a 25% reduction of weed infested areas by FY07.

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Training Lands Env. MGMT Program

Objective: Develop necessary plans to support Noxious weed control.

Target: By September 30, 2003, implement Scotch Broom and noxious weed control Plan that will achieve 25% reduction in weed infested areas by FY07.

- **FY03 goal:** Initiate Scotch Broom removal in Fort Lewis cantonment area during 1st quarter of FY03.
- **Program Team:** Ken Cadwell-Task lead, Darrell Robinson-M&R Chief, Jerry Elmer-Grounds Supervisor, Ed Ham-Pest Shop Lead

Tasks and Responsibilities:

- **<u>Schedule and Resources</u>**: Public Works Grounds crews will begin mechanical removal of Scotch Broom using ….

  The Public Works Pest Control Shop will conduct follow-up herbicide treatment……
- **<u>Metrics/Milestones</u>:** Public Works will mow and chemically treat 200 acres of Scotch Broom during FY03. Areas treated in FY03 will be …..
- **<u>Projected Costs</u>:** Cost per acre to mow and treat Scotch Broom with herbicides is projected to be $50 per acre. Total cost to treat 200 acres is $10,000.
- **<u>Other Resources</u>**: GIS (Teresa Hansen) will provide support with mapping…..

WHY ! WHAT! WHERE! WHO ! HOW ! WHEN! HOW !

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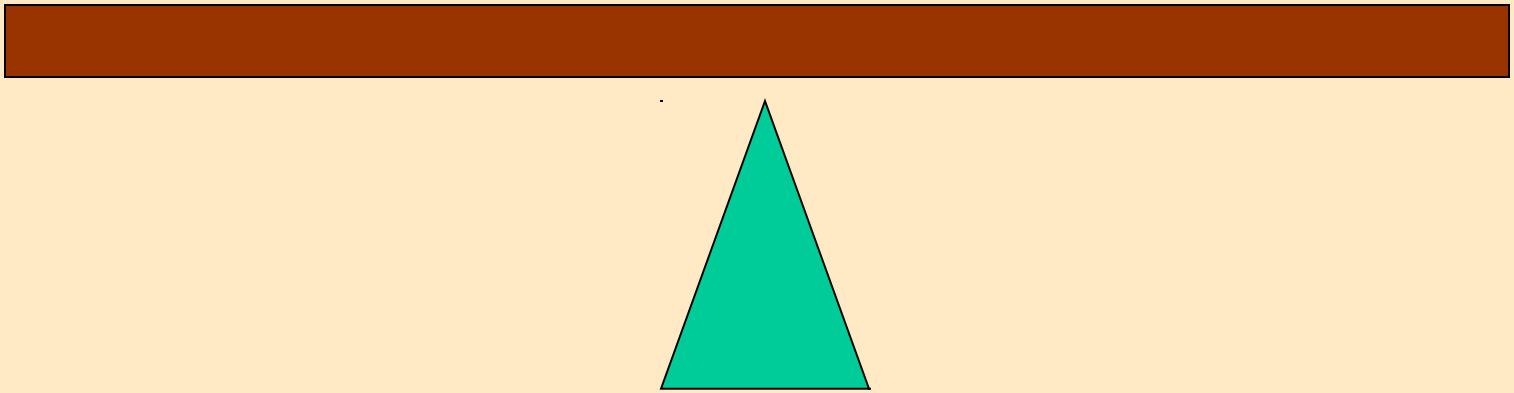
Our Intent-Achieve equilibrium via adaptive management

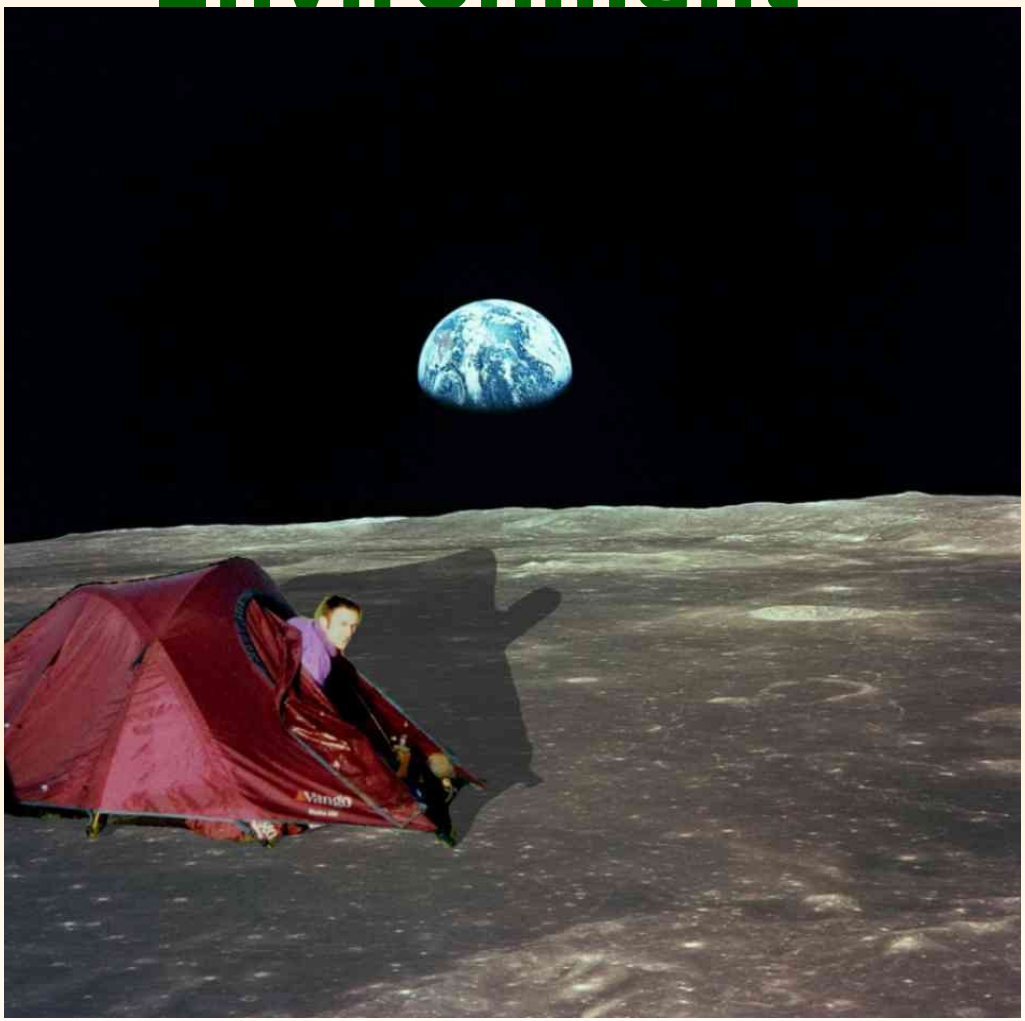
Resources Activities



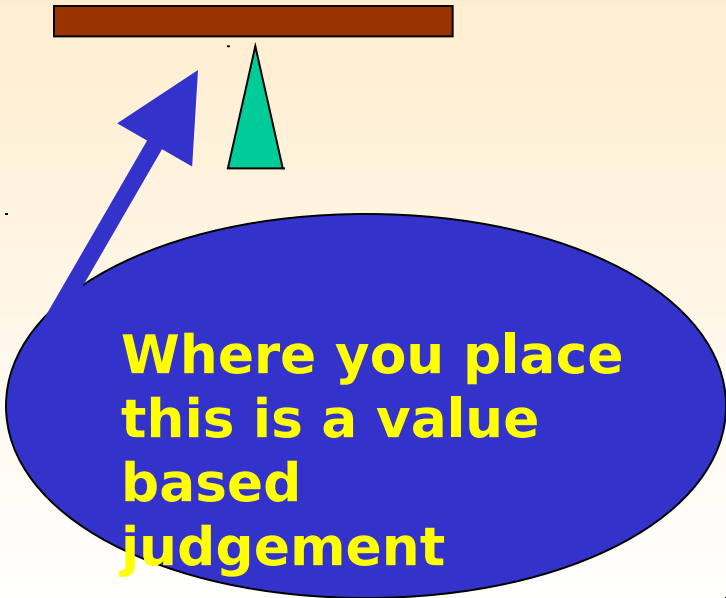
Sustainable Point

- Thresholds
- Monitoring
- Feed back Loops

A "Sustainable" Environment



- **Sustainable, but not likely able to Camp here**



Sustainable Land Management

Data Categories

Quantity

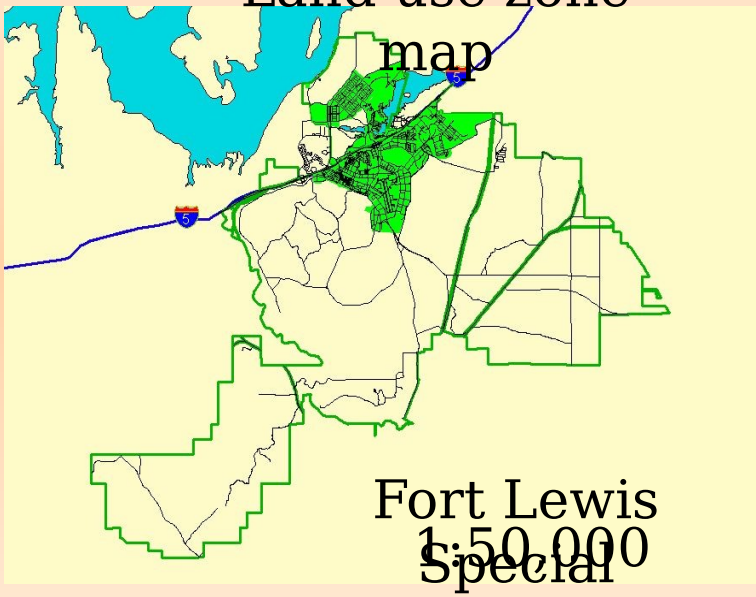
- How many (birds, ppb)
- Condition - how good/bad (Red, Amber, Green)

Timing

- temporal (Seasonal, diurnal)

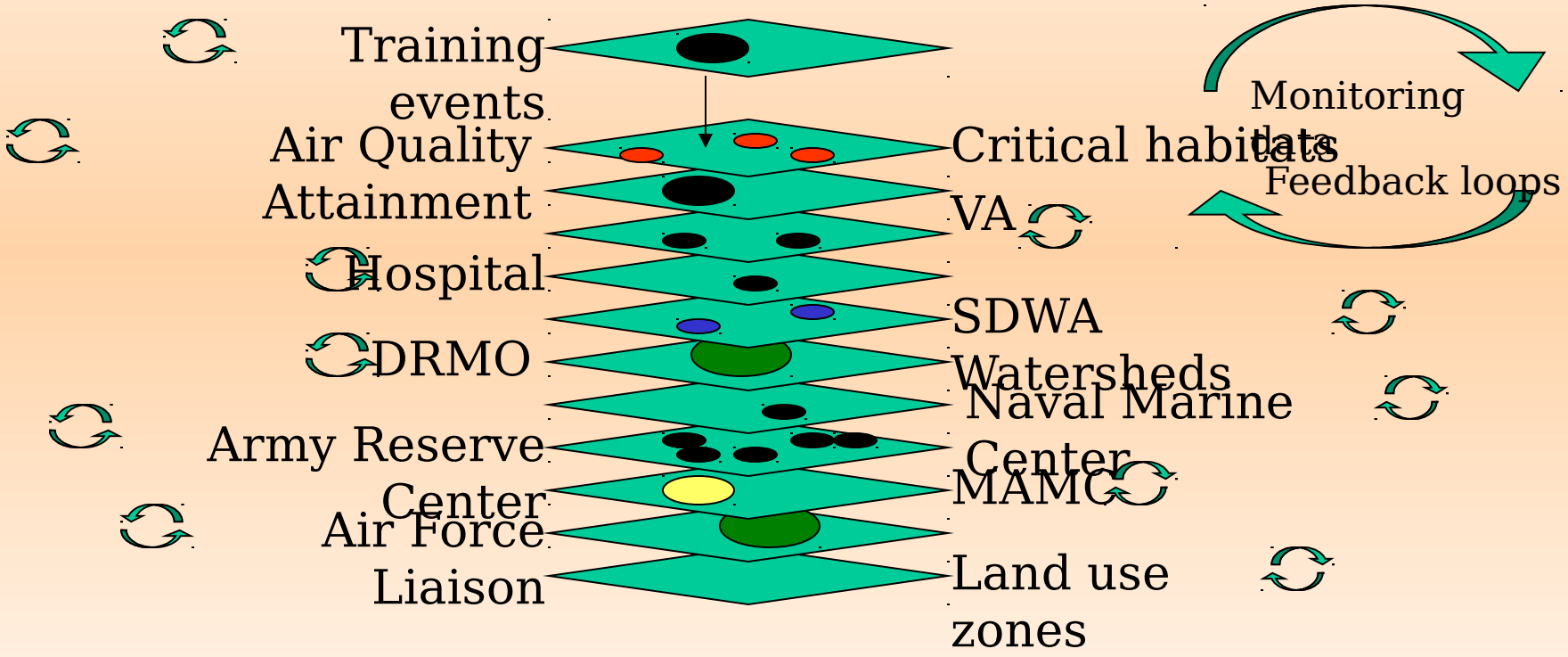
Distribution - Spatial relationships

- (2 or 3 dimensional) Habitat in acres or contamination plume)

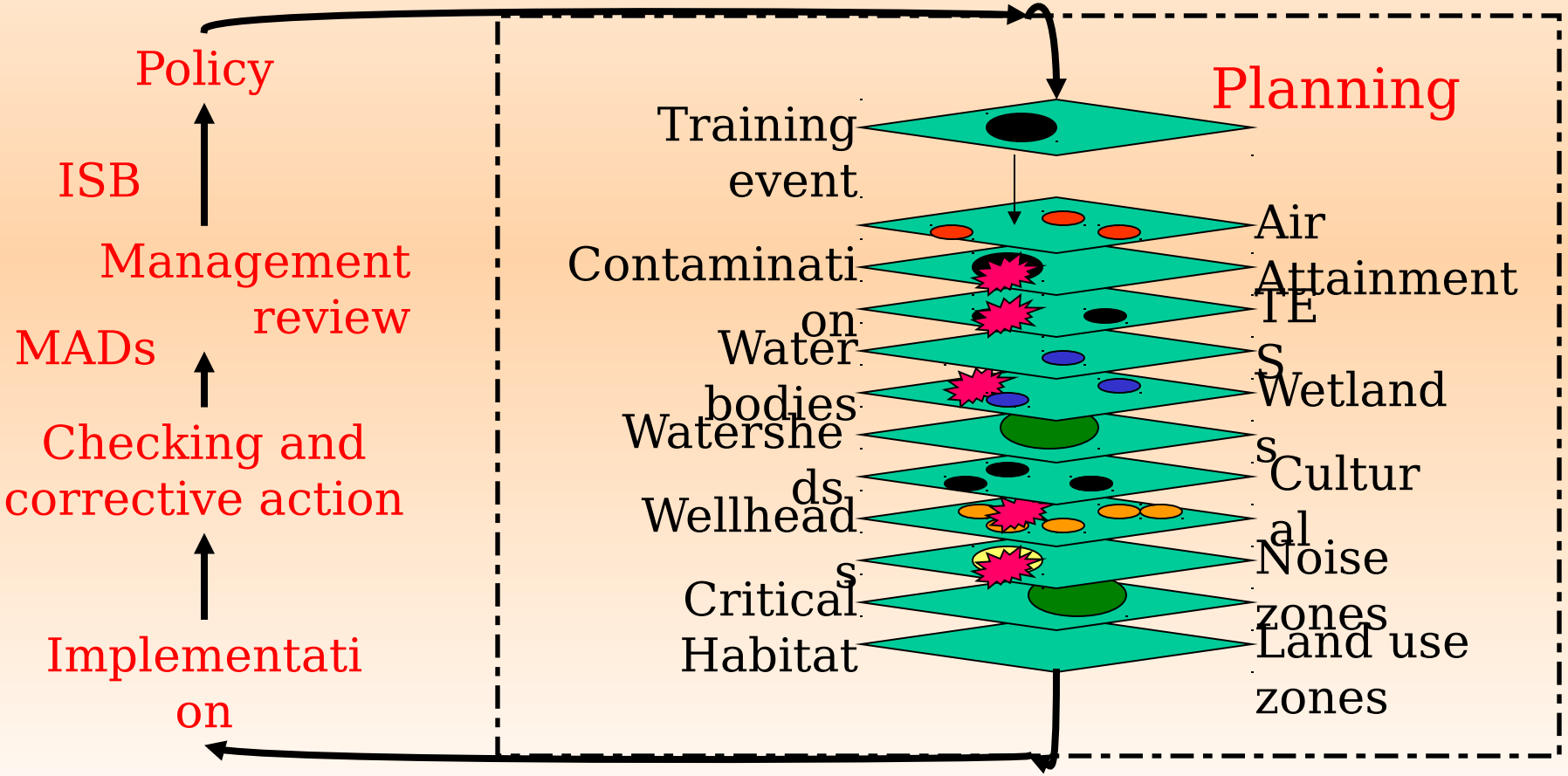


Converts to a data layer

Activity and Resource Systems



EMS Integration (system of systems)



Installation Sustainability Board (ISB)

- A quarterly forum to monitor progress toward a sustainable Fort Lewis.
- Command is updated and can issue guidance and/or decisions on:
  - Progress of ISO 14001 EMS
  - Progress of Sustainability goals and milestones
  - Past deconfliction actions
  - Ongoing conflicts
  - Future actions
  - Make resource decisions

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Fort Lewis Sustainability Program Status

- **Five Year Plan**
  - **Air Team**
    - Temporary CNG station - 5 August
    - Biodiesel use – FY04
    - Initiated use of low-VOC CARC at DOL
  - **Water Team**
    - Plan development for reuse of wastewater starting 2007
  - **Infrastructure/Energy Team**
    - Photovoltaic trailer on-site for pilot - 2 August
    - FLW construction policy – LEED silver
    - Pilot site for LEED-EB building renovation
  - **Products and Materials Team**
    - Dry Cleaning - liquid carbon dioxide
    - SW contract to increase SW diversion
    - Vehicle maintenance facility recycling
  - **Training Lands Team**
    - Private Lands Initiative – Army Compatible Use Buffers

Additional Information is found at:
http://www.lewis.army.mil/publicworks, then click on "Sustainability" in the upper left-hand corner

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AIR QUALITY TEAM

- **Reduce installation traffic congestion and traffic air emissions by 85% by 2025**
  - **50% GSA fleet will be alternative fueled vehicles by 2007**
    - **Dedicate Ft Lewis AFVs to using alternative fuels**
    - **Eventual conversion of 100% of fleet**
    - **Larger footprint of AFVs increases potential demand for alternative fueling stations**

    - **Provide alternative fueling opportunity to non-military users to stimulate and encourage alternative fuel vehicle use in the Puget Sound Region**

AIR QUALITY TEAM

- **Reduce installation traffic congestion and traffic air emissions by 85% by 2025**
  - **50% GSA fleet will be alternative fueled vehicles by 2007 (continued)**
    - **GEM and Taylor Dunn – Pilot Test**
    - **Pilot working to improve electric vehicle product performance and applicability**
    - **14 Neighborhood Electric Vehicles (NEV) currently on-post**

Electruck® by Taylor-Dunn

Gem – Daimler Chrysler

  - **45% reduction in single occupancy vehicles and vehicle miles traveled by 2007**
    - **Pierce Transit Ride Share Program**

AIR QUALITY TEAM

- **Reduce stationary source air emissions 85% by 2025**
  - **Use of water-based, or new low VOC CARC paint on 90% of tactical vehicles and all miscellaneous metal and plastic parts**
  - **Use of biodiesel for backup generators and boilers**

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INFRASTRUCTURE/ENERGY TEAM

- **Sustain all activities on post using renewable energy sources and generate all electricity on post by 2025**
  - **25% of Electricity from Renewable Sources by 2008**
    - Feasibility study for rooftop placement and effectiveness of solar panels
    - Exploring feasibility of increasing FTL 3% purchase of Green Power from Tacoma Public Utilities
    - Ongoing assessment for windpower at Yakima Training Center
  - **Generate 20% of Energy Requirements on Post by 2008**
    - Partnering with COE and BPA to test a 3KwH methanol fuel cell
    - Construction and operation of a 500KwH natural gas fuel cell

Photos courtesy of Dept of Energy

INFRASTRUCTURE/ENERGY TEAM

- **All facilities adhere to the LEED platinum standard for sustainable facilities by 2025**
  - **Develop a Baseline LEED (Leadership in Energy and Environmental Development) Rating for All Permanent Buildings by FY 2004**
    - Member of US Green Building Council
    - Hosting LEED workshops
    - Conducted initial baseline assessments for two buildings in 2002
  - **Establish Minimum LEED Rating (New Construction)**
    - FY04 Whole Barracks Renewal is a design/build project w/LEED standard of silver
    - Establish a LEED gold rating in 2005 for new construction
    - Conduct LEED-EB(Existing Building) pilot program

PRODUCTS/MATERIAL MANAGEMENT TEAM

- **Cycle all material use to achieve zero net waste by 2025**
  - **Change procurement practices to introduce only cyclable materials to Fort Lewis**
    - Model Motor Pools that utilize recycled vehicle fluids and maximize vehicle fluid recycling
    - Piloting carpet replacement using recycled/recyclable carpet tiles
    - Exploring office furniture reuse

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SUSTAINABLE TRAINING LANDS TEAM

- **Attain healthy, resilient Fort Lewis and regional lands that support training, ecosystem, cultural and economic val y 2025**
  - **Identify and acquire three sites in regional proximity to installation to reduce encroachment, maintain training capability and promote natural resources conservation**
    - 13 areas have been identified for potential acquisition under the PLI
    - Identified potential partners in land acquisition/management
    - Congress has authorized the

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SUSTAINABLE TRAINING LANDS TEAM

- **Recover all listed and candidate federal species in the South Puget Sound Region**
  - **Identify existing populations of Federal and State listed and candidate species in the region and identify causal factors for their decline**
    - Contracts to survey listed and candidate species requiring current data on population status within Ft Lewis have been awarded

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WATER RESOURCES TEAM

- **Zero discharge of wastewaters by 2025**
  - Washington State Dept of Corrections
    - Provided information concerning permitting for land application of effluent and biosolids
- **Reduce Fort Lewis potable water consumption 75% by 2025**
  - **Reduce potable water consumption 25% by 2007**
    - City of Olympia and the Lacey-Olympia-Tumwater-Thurston Co Wastewater Treatment Plant
      - Provided a study on effectiveness of their water conservation programs

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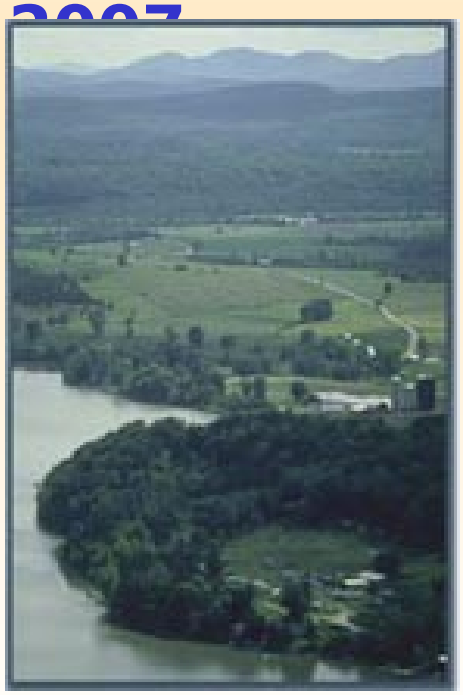
WATER RESOURCES TEAM

- **Develop an effective regional aquifer and watershed management program by 2012**
  - **Develop an internal aquifer and watershed management program and be an active participant in established regional aquifer and watershed planning committee(s) by 2007**

- Nisqually River Council
- Chambers-Creek Watershed Planning Unit
- Sequalitchew Creek Council
- Muck Creek Council
- Puget Sound Regional Water Planning Unit
- Nisqually Watershed Planning Unit



“Installation Sustainability moves us beyond simply solving today’s problems. A sustainable Army is one that wins today’s battles while laying the foundation for our future success. It connects today to tomorrow with sound business and environmental practices…Sustainability enables today’s Army to empower the Future Force.”

Dr. Mario P. Fiori,
Assistant Secretary of the Army (Installations & Environment)
September 2003…

QUESTIONS?

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